STATE OF INDIANA)
)
COUNTY OF MARION)

BEFORE THE INDIANA OFFICE OF ENVIRONMENTAL ADJUDICATION

IN THE MATTER OF:

OBJECTION TO THE ISSUANCE OF SIGNIFICANT MODIFICATION OF A PART 70 SOURCE AND SIGNIFICANT PERMIT MODIFICAITON TO A PART 70 OPERATING PERMIT FOR DUKE ENERGY INDIANA-EDWARDSPORT GENERATING STATION IN KNOX COUNTY, Significant Source Modification No. T083-23529-00003/ Operation Permit No. T083-7243-00003

Sierra Club, Valley Watch, Inc., Save the Valley, Inc., and Citizen Action Coalition of Indiana, Inc.,

Petitioners,

Duke Energy Indiana,
Respondent/Permittee,

Indiana Department of Environmental Management,
Respondent.

Cause No. _____

VERIFIED PETITION FOR REVIEW AND FOR STAY OF EFFECTIVENESS

Pursuant to Ind. Code 4-21.5-3, 4-21.5-7, 13-15-6, *et seq.*, and 315 IAC 1-1-1, *et seq.*, Sierra Club, Valley Watch, Inc. ("VW"), Save the Valley, Inc. ("STV") and Citizens Action Coalition of Indiana, Inc. ("CAC"), by counsel, hereby submit a

Verified Petition for Administrative Review and Stay of Effectiveness of the Significant Source Modification Permit No. T083-23529-00003 and Modified Part 70 Operating Permit No. T083-7243-00003, for the Duke Energy Indiana Edwardsport Generating Station in Knox County and dated January 25, 2008 (hereinafter collectively as "Permit").

A copy of the Notice of Decision is hereto as Exhibit A. A copy of the Permit is attached, in electronic format saved to CD ROM, as Exhibit B.

The Permit authorizes Duke Energy Indiana ("DEI") to undertake a major modification to the Edwardsport Generating Station ("EGS"), 15424 East State Road 358, Edwardsport, Indiana. The modification will include construction of the following new emission sources:

(1) Two (2) refractory-lined, oxygen-blown, entrained flow gasifiers designated as GASIF1 and GASIF2;

(2) Two (2) natural gas fired gasification preheaters designated as GPREHEAT and GPREHEAT2, with a heat capacity of 9.1 MMBtu/hour/each;

(3) One (1) natural gas fired thermal oxidizer, designated as THRMOX, with a maximum heat input for the pilot of 3.85 MMBtu/hour;

(4) One natural gas fired elevated open flare designated as FLR, with a maximum heat input for the pilot of 1.23 MMBtu/hour, and an additional 1.44 MMBtu/hour heat input for sweep enrichment gas/flare purge;

(5) Two (2) combined cycle combustion turbine trains each consisting of a combustion turbine and heat recovery steam generator, designated as CTHRSG1 and CTHRSG2, firing synthetic gas, natural gas, or a combination of synthetic and natural gas;

(6) One (1) reheat, condensing steam turbine;

(7) One (1) twenty-two (22) cell induced draft cooling tower designated as CT1-CT22;

(8) One natural gas fired auxiliary boiler designated as AUXBLR, with a maximum heat input capacity of 300 MMBtu/hour;

(9) Two (2) natural gas fired turbine gas conditioning preheaters designated as TPREHEAT1 and TPREHEAT2 with a maximum capacity of 5 MMBtu/hour/each;

(10) One (1) diesel-fired emergency generator designated as EMDSL, with a maximum rating of 2200 brake-horsepower;

(11) One 250 ton/hour coal pile drop point;

(12) One (1) 1200 ton/hour truck or railcar receiving and unloading station with enclosed drop points;

(13) Two (2) enclosed 250 ton/hour coal grinding mills;

(14) Pneumatic limit conveyor to lime silo;

(15) One (1) 300 ton/hour lime storage silo;

(16) Coal storage piles including one (1) inactive coal pile identified as CP_IN and one (1) active coal pile identified as CP_AC;

(17) Slag storage pile and slag handling; and

(18) Paved roads.

PETITION FOR ADMINISTRATIVE REVIEW.

A. <u>The Petitioners and Interests 315 IAC 1-3-2(b)(1)-(3)</u>

1. Petitioner Sierra Club is an international not for profit membership organization, which is headquartered in San Francisco, California, and is active in all 50 states and the District of Columbia. Sierra Club has over 1.3 million members and supporters, including members who live, work, and recreate in the area that will be immediately impacted by pollution emissions from the EGS. Sierra Club's purpose includes practicing and promoting the responsible use of earth's ecosystems and resources, and protecting and restoring the quality of the natural and human environment. Included in this mission is to reduce and eliminate pollution from the mining, combustion, and waste disposal of coal, which negatively affects Sierra Club's members as well as other members of the public. Sierra Club's Indiana Chapter (Hoosier Chapter) has more than 7,000 members, and its mailing address is 1915 W. 8th Street, Suite D, Indianapolis, Indiana 46202. Its telephone number is (317) 822-3750.

2. Sierra Club represents the interests of its members, who include the following aggrieved individuals:

A. Fred Halter, 711 S. Meridian Street, Washington, IN 47501. Halter's place of residence is located approximately eighteen miles south of the

Edwardsport plant. Halter works and recreates in the area of the proposed Edwardsport plant and spends a significant portion of his free time outdoors. Because of the proximity of his residence to the Edwardsport plant, Halter will suffer the direct, negative health impacts of excessive amounts of air pollution emitted by the facility and will be forced to breathe pollutants in an amount that should be reduced in accordance with the law. The environmental degradation will also unnecessarily adversely impact the value of his property and real estate and cause damage to his property and real estate. Halter is thus personally aggrieved by the issuance of the Permit, due to the negative health and property impact of the excessive air pollution in the area where he lives, recreates and works. Halter has been a member of the Sierra Club since he joined in September 2001. Halter's membership is current through December 2008.

B. John Mulroony, 1989 S 75 E, Washington, IN 47501. Mulroony's place of residence is located approximately eighteen miles south of the Edwardsport plant. Mulroony lives and recreates in the area of the proposed Edwardsport plant. Mulroony retired approximately three years ago and now spends a significant portion of his time outdoors. Mulroony and his wife enjoy kayaking on nearby lakes and ponds as well as tending to their flower and vegetable garden. Because of the proximity of his residence to the Edwardsport plant, Mulroony will suffer the direct,

negative health impacts of excessive amounts of air pollution emitted by the facility and will be forced to breathe pollutants in an amount that should be reduced in accordance with the law. The environmental degradation will also unnecessarily adversely impact the value of his property and real estate and cause damage to his property and real estate. Mulroony is thus personally aggrieved by the issuance of the Permit, due to the negative health and property impact of the excessive air pollution in the area where he lives, recreates and works. Mulroony has been a member of the Sierra Club since he joined in April 2007. Mulroony's membership, which he plans to renew, is current through March 2008.

C. Pete Slowik, 358 E. 900 N., Washington, Indiana 47501. Slowik's place of residence is located approximately 5 miles southeast of the Edwardsport plant. Slowik owns a 20 acre peach orchard at this location, on which he works, and he hunts in the area as well. Because of the proximity of Slowik's residence and orchard, and because he works and recreates outdoors in the area, Slowik will suffer the direct, negative health impacts of excessive amounts of air pollution emitted by the facility and will be forced to breathe pollutants in an amount that should be reduced in accordance with the law. The environmental degradation will also unnecessarily adversely impact the value of his property and real estate and cause damage to his property and real estate. Slowik is thus personally aggrieved by the issuance of the Permit, due to the negative

health and property impact of the excessive air pollution in the area where he lives, recreates and works. Slowik is a member of the Sierra Club and his membership is current through December 2008.

3. Sierra Club members, including but not limited to those identified above, live, work, and recreate downwind from the Edwardsport Generating Station. The Permit authorizes increases in air pollution that, as set forth below, exceed applicable pollution control requirements and air quality standards, which exposes Sierra Club's members, including those listed above, to unlawful amounts of air pollution. Sierra Club, on behalf of its members, has an interest in reducing or eliminating the pollution from the Edwardsport Generating Station through this adjudication to reduce the amount of air pollution entering the lungs of those members and which negatively impacts visibility.

4. Save the Valley is an Indiana non-profit membership organization which is registered with the State of Indiana. Save the Valley was organized and operates with the purpose of protecting the environment in the Ohio River Valley in Southeastern Indiana and Northeastern Kentucky. Approximately 100 individuals are members of Save the Valley. The mailing address of Save the Valley is P.O. Box 813, Madison, Indiana 47250. Its telephone number is (812) 273-6015.

5. Save the Valley represents the interests of its members, who include the following aggrieved individuals:

A) Richard Hill, 3800 W H&H Rustic Ln, Madison, IN 47250. Hill's residence is located approximately 120 miles due East of the proposed Edwardsport coal-fired power plant. Because of the proximity of Hill's residence, and because he works and recreates outdoors in the area, Hill will suffer the direct, negative health impacts of excessive amounts of air pollution emitted by the facility and will be forced to breathe pollutants in an amount that should be reduced in accordance with the law. The environmental degradation will also unnecessarily adversely impact the value of his property and real estate and cause damage to his property and real estate. Hill is thus personally aggrieved by the issuance of the Permit, due to the negative health and property impact of the excessive air pollution in the area where he lives, recreates and works. Hill is a member of Save the Valley and his membership is current through December 2008.

B) Mary Clashman, 801 Filmore, Madison, IN 47250. Clashman's residence is located approximately 120 miles due East of the proposed Edwardsport coal-fired power plant. Because of the proximity of Clashman's residence, Clashman will suffer the direct, negative health impacts of excessive amounts of air pollution emitted by the facility and will be forced to breathe pollutants in an amount that should be reduced in accordance with the law. The environmental degradation will also unnecessarily adversely impact the value of her property and real estate

and cause damage to her property and real estate. Clashman is thus personally aggrieved by the issuance of the Permit, due to the negative health and property impact of the excessive air pollution in the area where she lives, recreates and does business. Clashman is a member of Save the Valley and her membership is current through December 2008.

C) Robert Gray, 7945 S Saluda-Paynesville Rd, Hanover, IN 47243. Gray's residence is located approximately 120 miles due East of the proposed Edwardsport coal-fired power plant. Because of the proximity of Gray's residence, Gray will suffer the direct, negative health impacts of excessive amounts of air pollution emitted by the facility and will be forced to breathe pollutants in an amount that should be reduced in accordance with the law. The environmental degradation will also unnecessarily adversely impact the value of his property and real estate and cause damage to his property and real estate. Gray is thus personally aggrieved by the issuance of the Permit, due to the negative health and property impact of the excessive air pollution in the area where he lives, recreates and does business. Gray is a member of Save the Valley and his membership is current through December 2008.

D) James Scott, 1238 W Main St, Madison, IN 47250. Scott's residence is located approximately 120 miles due East of the proposed Edwardsport coal-fired power plant. Because of the proximity of Scott's residence, Scott will suffer the direct, negative health impacts of excessive amounts

of air pollution emitted by the facility and will be forced to breathe pollutants in an amount that should be reduced in accordance with the law. The environmental degradation will also unnecessarily adversely impact the value of his property and real estate and cause damage to his property and real estate. Scott is thus personally aggrieved by the issuance of the Permit, due to the negative health and property impact of the excessive air pollution in the area where he lives, recreates and does business. Scott is a member of Save the Valley and his membership is current through December 2008.

E) George Scott, 1597 S Scott Rd, Vevay, IN 47043. Scott's residence is located approximately 120 miles due East of the proposed Edwardsport coal-fired power plant. Because of the proximity of Scott's residence, Scott will suffer the direct, negative health impacts of excessive amounts of air pollution emitted by the facility and will be forced to breathe pollutants in an amount that should be reduced in accordance with the law. The environmental degradation will also unnecessarily adversely impact the value of his property and real estate and cause damage to his property and real estate. Scott is thus personally aggrieved by the issuance of the Permit, due to the negative health and property impact of the excessive air pollution in the area where he lives, recreates and does business. Scott is a member of Save the Valley and his membership is current through December 2008.

6. Save the Valley's members live, work, and recreate downwind from the Edwardsport Generating Station. The Permit authorizes increases in air pollution that, as set forth below, exceed applicable pollution control requirements and air quality standards, which expose Save the Valley's members, including those listed above, to unlawful amounts of air pollution. Save the Valley, on behalf of its members, has an interest in reducing or eliminating the pollution from the Edwardsport Generating Station through this adjudication to reduce the amount of air pollution entering the lungs of those members and which negatively impacts visibility.

7. Citizens Action Coalition is an Indiana non-profit membership organization with more than 70,000 individual members and contributors statewide. It was organized to advocate on behalf of its members to preserve democracy, conserve natural resources, protect the environment, and provide affordable access to essential utility and human services. Citizens Action Coalition represents the interests of its members on energy and utility issues, and it has actively worked on behalf of its members to minimize the environmental impacts of electricity production, transmission, distribution and consumption throughout the State of Indiana. Citizens Action Coalition's mailing address is 603 E. Washington Street, Suite 502, Indianapolis, Indiana 46204. Its telephone number is (317) 205-3535.

8. Citizens Action Coalition represents the interests of its members, including the following aggrieved individuals:

A) Steven Higgs, 809 S. Lincoln St., Bloomington, IN 47401-4711. Higgs' residence is located approximately 50 miles Northeast of the proposed Edwardsport coal-fired power plant. Because of the proximity of Higgs' residence, Higgs will suffer the direct, negative health impacts of excessive amounts of air pollution emitted by the facility and will be forced to breathe pollutants in an amount that should be reduced in accordance with the law. The environmental degradation will also unnecessarily adversely impact the value of his property and real estate and cause damage to his property and real estate. Higgs is thus personally aggrieved by the issuance of the Permit, due to the negative health and property impact of the excessive air pollution in the area where he lives, recreates and does business. Higgs is a member of Citizens Action Coalition and his membership is current through December 2008.

B) Kerwin Olsen, 8351 N. Fox Hollow Rd., Bloomington, IN 47408. Olsen's residence is located approximately 50 miles Northeast of the proposed Edwardsport coal-fired power plant. Olsen has a son with severe asthma and respiratory problems. Olsen and his children recreate outdoors and in local and state parks. Because of the proximity of Olsen's residence, Olsen and his children will suffer the direct, negative health impacts of excessive amounts of air pollution emitted by the facility and will be forced to breathe pollutants in an amount that should be reduced in accordance with the law. Olsen is thus personally aggrieved by the

issuance of the Permit, due to the negative health impacts of the excessive air pollution in the area where he lives and recreates. Olsen is a member of Citizens Action Coalition and his membership is current through December 2008.

C) Paul Chase, 5589 State Road 45, Nashville, IN 47448 (in Brown County). Chase's residence is located approximately 75 miles Northeast of the proposed Edwardsport coal-fired power plant. He also recreates outdoors. Because of the proximity of Chase' residence, Chase will suffer the direct, negative health impacts of excessive amounts of air pollution emitted by the facility and will be forced to breathe pollutants in an amount that should be reduced in accordance with the law. The environmental degradation will also unnecessarily adversely impact the value of his property and real estate and cause damage to his property and real estate. Chase is thus personally aggrieved by the issuance of the Permit, due to the negative health and property impact of the excessive air pollution in the area where he lives, recreates and does business. Chase is a member of Citizens Action Coalition and his membership is current through December 2008.

9. Citizens Action Coalition members live, work, and recreate downwind from the Edwardsport Generating Station. The Permit authorizes increases in air pollution that, as set forth below, exceed applicable pollution control requirements and air quality standards, which expose Citizens Action

Coalition's members, including those listed above, to unlawful amounts of air pollution. Citizens Action Coalition, on behalf of its members, has an interest in reducing or eliminating the pollution from the Edwardsport Generating Station through this adjudication to reduce the amount of air pollution entering the lungs of those members and which negatively impacts visibility.

10. Valley Watch is an Indiana non-profit corporation organized as a membership organization government by a board of directors elected from the membership. Valley Watch's purpose is to protect the public health and environment of the lower Ohio River Valley. Valley Watch's address is 800 Adams Avenue, Evansville, Indiana 47713. The phone number is (812) 464-5663.

11. Valley Watch represents the interests of its members, including the following aggrieved individuals:

A) Jessica Boyd, 1501 B. Schutte Road, Evansville, Indiana. Ms. Boyd spends time in the vicinity of the Edwardsport Generating Station and is forced to breath pollution from the facility. Ms. Boyd suffers from breathing problems caused, at least in part, by ozone and fine particulate matter. These problems will continue, or worsen, if the Permit for EGS is upheld as issued.

B) John Blair, 800 Adams Avenue, Evansville, Indiana. Mr. Blair suffers from a chronic upper respiratory problem often referred to as "Evansville Crud." Mr. Blair's breathing problems worsen when ozone and fine particle levels increase. These problems will continue or worsen if the

Permit is upheld. Additionally, Mr. Blair is a commercial aerial photographer. His ability to work is jeopardized when pollution from power plants, including EGS, impair visibility. Haze caused by power plant pollution makes it difficult to impossible to shoot aerial photographs, impairing Mr. Blair's ability to earn a living.

12. Valley Watch members live, work, and recreate downwind from the Edwardsport Generating Station. The Permit authorizes increases in air pollution that, as set forth below, exceed applicable pollution control requirements and air quality standards, which expose Valley Watch's members, including those listed above, to unlawful amounts of air pollution. Valley Watch, on behalf of its members, has an interest in reducing or eliminating the pollution from the Edwardsport Generating Station through this adjudication to reduce the amount of air pollution entering the lungs of those members and which negatively impacts visibility.

13. The attorneys for the petitioners are Jerome E. Polk, Polk & Associates LLC, 309 W. Washington Street, Suite 233, Indianapolis, IN 46204, and, pending admission pro hac vice, David C. Bender and Christa Westerberg, Garvey McNeil & McGillivray, S.C., 634 W. Main Street, Suite 101, Madison, WI 53708, Tel. (608) 256-1003, Fax (608) 256-0933.

14. The above-named organizations submitted comments to the Indiana Department of Environmental Management and are therefore entitled to a hearing as a matter of law. IC 13-15-6-1(b), 4-21.5-3-7(a)(1)(C); *see also* 42 U.S.C.

§ 7661a(b)(6) (any person who participated by offering public comments has a right to review); 40 C.F.R. § 70.4(b)(3)(x) (same).

15. The above-named organizations also represent their members, who will be adversely impacted by the permitting decision at issue and are therefore entitled to a hearing. IC 4-21.5-3-7(a)(1)(B); IC 13-15-6-1(a)(2). The basis for such adverse impacts are further set forth above, in paragraphs 1 through 12.

16. Members of the above-named organizations who will be directly and adversely impacted include those individuals identified above, in addition to other members who have not been specifically identified and whose identities are protected by the First Amendment of the United States Constitution. These members are negatively affected by the decision to issue the Permit because it allows the construction of new air pollution emission sources and increases in air pollution, beyond what is allowed by law, which will have the effect of decreasing visibility, increasing risk of heart and lung disease, causing and exacerbating breathing problems, and causing reasonable concern among these members of negative health impacts.

A. Legal Issues: Environmental Concerns or Technical Deficiencies. 315 IAC 1-3-2(b)(4)(A)(i).

Issue 1: Failure to Include BACT Limits for NOx, SO2, SAM and Be.

17. Pursuant to the federal Clean Air Act and the Indiana Administrative Code, no construction project at a major stationary source can

occur unless the source is subject to best available control technology ("BACT") limits for "each regulated NSR pollutant for which the modification would result in a significant net emissions increase at the source." 326 IAC 2-2-3.

18. The Indiana Department of Environmental Management ("IDEM") concluded that the project at EGS will not result in a significant net increase of nitrogen oxides (NOx), sulfur dioxide (SO2), sulfuric acid mist ("SAM" or H2SO4), and Beryllium (Be). See Technical Support Document ("TSD") at 11-12, Tables 8, 9.

19. NOx, SO2, SAM and Be are "regulated NSR pollutants." 326 IAC 2-2-1(uu).

20. A "significant" increase is an increase greater than the thresholds in 326 IAC 2-2-(ee).

21. A "net increase" is the amount of increase from a construction or modification project after other contemporaneous and creditable increases and decreases are added, or subtracted. 326 IAC 2-2-1(jj). This calculation is known as a "netting analysis."[1]

22. Decreases at the emission source are "creditable"—meaning they can be used to off-set other emission increases in a "netting analysis"— only to the extent that the old emissions were "allowable" and if the decrease "has

[1] Accounting for future emission reductions at the source can also be done in calculating emission increases based on difference between baseline (historic) emissions and the projected future emissions, pursuant to 326 IAC 2-2-2. Historic baseline emissions must be adjusted downward to account for emissions exceeding allowable emission rates. 326 IAC 2-2-1(e)(1)(B). Such analysis would result in the same conclusions as a netting analysis for purposes of this Issue.

approximately the same qualitative significance for public health and welfare as that attributable to the increase." 326 IAC 2-2-1(jj)(6).

23. IDEM's netting analysis credited DEI with emission decreases at EGS for the proposed shutdown of four existing boilers and associated equipment at the plant. IDEM assumed that all of the historic emissions from the existing boilers and associated equipment was "allowable," pursuant to 326 IAC 2-2-1(jj)(6). Se TSD at 11-12, Tables 8, 9. In other words, IDEM allowed DEI to take credit for the full amount of historic emissions from the existing sources in a netting analysis for the project to construct new emission sources.

24. IDEM erred in its netting analysis because the old level of emissions from the existing boilers and equipment vastly exceeded the allowable emissions from those sources.

25. Allowable emissions are based on the maximum rate allowed by the most stringent of, *inter alia*, the state implementation plan emission limitations. 326 IAC 2-2-1(d)(2).

26. The Indiana State Implementation Plan limitations include the requirement to comply with BACT emission limits at all major modified sources. 326 IAC 2-2-3(3).

27. The EGS existing boilers and associated equipment were subject to BACT emission limitations during the "contemporaneous" periods used in a netting analysis in 326 IAC 2-2-1(jj)(2), because the EGS underwent one or more

"major modifications" under the then-applicable Prevention of Significant Deterioration regulations.

28. A "major modification," which triggers the requirement to comply with BACT emission limits, is any physical change or change in operations that results in a significant net emissions increase. See e.g., 326 IAC 2-2-(ee) (current definition). The test for what constitutes a major modification has changed between the creation of the Clean Air Act's Prevention of Significant Deterioration ("PSD") program and today. The historic projects as EGS constituted major modifications under the regulations effective at the time of each project, as well as under all other versions of those regulations.

29. Based on information available to the petitioners, the EGS underwent the following projects, in addition to other projects, which constitute major modifications and subjected the plant to BACT emission limits for all regulated NSR pollutants:

a. In or about 1994 pneumatic controls, process transducers, and pressure converters were replaced or modified on boilers 7-1 and 7-2.

b. In or about 1990 pneumatic controls, process transducers, and pressure converters were replaced on boiler 8-1.

c. In or about 1992 and 1993, the upper and lower halves of the high pressure shell and control values and actuators were replaced on #8.

d. In or about 1990 and 1991 boiler 7-2 was retubed.

e. In or about 1991 new boiler tubes were installed on boiler 7-1, including downcomer tubes, first stage superheater tubes and portions of the bottom ring wall header tubes.

f. In or about 1992 boiler 8-1 was retubed, including downcomer tubes, first stage superheater tubes and portions of the bottom ring wall header tubes.

g. In or about 1986 boiler controls were installed on boiler 8-1 and surface condenser tubes were replaced in boiler 8-1. The cost of the condenser tubes, alone, was over $540,000.

h. In or about 1986 boiler 7-2 was retubed at a cost of over $630,000.

i. In or about 1987 through 1990 extensive modifications were made to boilers 6, 7 and 8 to revitalize and extend the life of the units. The cost of this work was estimated to be over $3 million per unit.

j. In or about 1988 boiler 6-1 was converted to allow for burning of coal fuel.

k. Between 1986 and 1988 combustion controls on boilers 7-1, 7-2 and 8-1 were replaced at a cost of over $300,000 per boiler.

l. In or about 1988 the turbine generator on unit 8 was overhauled at a cost over $700,000.

m. In or about January 1989 the turbine generator on Unit 6 was repaired.

30. Each of the projects above is a physical change which resulted in a significant net emissions increase of one or more regulated NSR pollutants, and constituted a "major modification."

31. After each major modification above, the affected units were subject to BACT emission limitations, which were at least 98% control for SO2, 90% control of NOx, 98% control of SAM, and 90% control of Be for the boilers.

32. IDEM's netting analysis for the current project failed to account for the fact that the "creditable" emission reductions for the shutdown of the existing emission sources (to offset the emission increases from new sources) are only those historic emissions that complied with BACT and were therefore "allowable" emissions. 326 IAC 2-2-1(6)(A).

33. A correct netting analysis, using only "allowable emissions," as required by 326 IAC 2-2-1(jj)(6)(A), results in significant net emission increases of NOx, SO2, SAM and Be from the project. Therefore BACT emission limits are required for each of these pollutants. The permit fails to include such limits and must, therefore, be vacated or stayed unless and until such limits are included.

34. IDEM's netting analysis also failed to properly account for the fact that the historic emissions from the existing boilers and associated equipment are not of the same "qualitative significance" as the future emissions from the new equipment to be constructed at the EGS. To qualify for use in a netting analysis, emissions from the existing boilers and equipment must have "approximately

the same qualitative significance for public health and welfare as that attributed to the increase from the particular change." 326 IAC 2-2-1(jj)(6)(C).

35. IDEM equates this requirement with a determination that the project will not cause or contribute to a violation of air quality standards. See Technical Support Document Addendum ("TSD Addendum") at 39 (interpreting 326 IAC 2-2-1(jj)(6)(C) as only applying where an emission decrease "will not be sufficient to prevent the proposed emissions increase from causing or contributing to a violation of any PSD or NAAQS increment."). However, because a demonstration that the project will not cause or contribute to a violation of NAAQS or PSD increment is required elsewhere in the applicable regulations, 326 IAC 2-2-4, 2-2-5, 2-2-6, IDEM's interpretation of the equal qualitative significance requirement unlawfully renders that requirement a nullity. Such interpretation is contrary to law.

36. The existing boilers have already reached the end of their useful lives. The boilers were previously projected to be retired by 2004. In recent years, the use of and emissions from the boilers have decreased. For example, the emission have dropped by approximately 50% in the last four years and appear to be continuing to decline. *See e.g.*, Comments of Sierra Club, et al, at secs. III. A and B. In contrast, the proposed new emission sources will operate 85% of the time, and will emit pollution for many decades. Emissions occurring only 30% of the hours in a year, and declining, from emission units that will soon be retired, are not qualitatively the same for health and welfare as emissions that

will occur during 85% of the hours in a year and will occur for forty years or more.

37. Therefore, IDEM also erred in crediting emission decreases from the shutdown of existing boilers at EGS because the resulting emission decrease does not satisfy 326 IAC 2-2-1(jj)(6)(C). A netting analysis correcting this error by IDEM results in significant net emission increases of NOx, SO2, SAM and Be. Therefore BACT emission limits are required for each of these pollutants. The permit fails to include such limits and must therefore be vacated or stayed unless and until such limits are included.

Issue 2: IDEM Failed to Determine That the Project Will Not Result In Violations of PSD Increments When Emissions From All Increment-Consuming Sources Are Accounted For.

38. Pursuant to the Clean Air Act and Indiana Administrative Code, no permit can be issued for the construction or modification of a major source unless the source demonstrates that the project will not cause or contribute to a violation of either an "ambient air quality standard, as designated in 326 IAC 1-3," ("NAAQS") or an "applicable maximum allowable increase over the baseline concentration in any area" ("PSD Increment"). 326 IAC 2-2-5(a).

39. Additionally, absent a case-by-case approval by the IDEM Commissioner, following a specific petition by the applicant, no source may consume greater than 80% of the PSD Increment. 326 IAC 2-2-6(a). Such case-by-case approval did not occur in this case.

40. The PSD Increment is set forth in 326 IAC 2-2-6(b) for Class II air quality areas, including those affected by the project at EGS.

41. PSD Increment is a limit on the amount of air pollution concentration that can occur beyond the "baseline concentration." 326 IAC 2-2-5(a)(2).

42. The baseline concentration is generally the air quality that existed at the time of the first PSD major source permit. However, the regulations specifically provide that the "baseline concentration" excludes emissions from "any major stationary source on which construction commenced after the major source baseline date." 326 IAC 2-2-1(g)(3)(A). Instead, those units consume increment—meaning their emissions must be included when determining if emissions from the permittee source will cause or contribute to a violation of PSD increment.

43. The major source baseline date is January 6, 1975 for PM and SO2 and February 8, 1988 for NOx. 326 IAC 2-2-1(ff).

44. Emissions from the four existing boilers and associated equipment at EGS were modeled by IDEM as if part of the baseline concentration. Because these sources will be retired, IDEM modeled the historic emission rate from these units as negative numbers. This had the effect of allowing more air pollution emissions from the new emission sources at EGS than would be allowed if emissions from the existing units were not included in the baseline concentration.

45. IDEM erred because the existing boilers underwent major modifications in the past, after the major source baseline date, and, therefore, the emissions from those sources are not part of the "baseline concentration." 326 IAC 2-2-1(g)(3)(A).

46. As noted, supra, the existing EGS emission sources "commenced construction" after the major source baseline date because the emission sources underwent major modifications after the major source baseline date, including but not limited to the projects identified in paragraph 29, above.

47. When the air quality analysis required before a PSD permit can issue is corrected to account for the fact that the existing EGS sources as consuming PSD increment, rather than being part of the "baseline concentration," and especially when the other errors in the modeled emission rate noted below are corrected, the project causes violations of PSD Increment and the 80% limit on increment consumption in 326 IAC 2-2-5 and 2-2-6. The Permit is therefore unlawful and must be vacated.

Issue 3: IDEM Failed To Conduct Air Quality Impact Analyses Based On the Potential Emissions From All Emission Sources.

48. As noted above, a permit can only issue for a proposed project if the project is demonstrated not to cause or contribute to a violation of NAAQS or PSD Increment. 326 IAC 2-2-5(a). Additionally, no source can consume more than 80% of the available PSD Increment. 326 IAC 2-2-6.

49. To demonstrate that a project will not cause or contribute to a violation of NAAQS or PSD Increment, air dispersion modeling is required. This modeling must be conducted based on the maximum allowable operating conditions and emission rates during the applicable time period. U.S. EPA, New Source Review Workshop Manual at C.45-46 (Oct. 1990) ("NSR Manual"). For example, demonstrations that the source will not violate the 24-hour PM10 PSD Increment must be based on the maximum emissions during any 24-hour period, subject to enforceable limits during the time period.

50. A number of emission sources at the proposed EGS modified plant will emit particulate matter but are not subject to enforceable limits on the mass of emissions. Instead, these sources, including coal pile loading, coal pile maintenance, coal pile wind erosion, slag loading to storage piles, and traffic inside of the plant are subject, at most, to undefined "best management practices" and "compaction techniques," the requirement to apply "wet suppression techniques" on an undefined "as-needed basis" and speed restrictions without any apparent monitoring or enforcement mechanism. See Permit § D.11. Additionally, IDEM did not require site specific monitoring of air quality after the source is constructed to ensure compliance with air quality standards.

51. Despite the fact that there are no hourly or daily emission limits on these emission points, and the fact that IDEM concedes that the pollution abatement techniques required vary in effectiveness, IDEM assumed emission

rates for purposes of modeling that do not reflect the worst-case emissions during the 24 hour averaging period for compliance with the PM PSD Increment.

52. IDEM's modeling assumptions underestimated the emissions from PM sources through a combination of the following errors:

a. IDEM assumed wind speeds to estimate emission rates for coal loading to coal pile and slag loading to storage piles that do not represent the highest 24-hour average wind speed. TSD Appx A at 4, 6. Because emissions are proportional to wind speed, this underestimates the emissions from these emission points during worst-case conditions.

b. IDEM assumed production rates (material throughput) and vehicle miles traveled that do not represent the maximum potential in a 24-hour period. TSD Appx A at 3-8. Particulate emissions are proportional to these variables. Because production rates for coal and slag loading to storage piles and vehicle travel are not constant, but vary greatly from day to day, emissions are highest during the period of maximum production and vehicle travel. Assuming an average production rate, or average number of vehicle miles traveled, does not represent the maximum possible emission rate during any 24-hour period, and, therefore, underestimates the potential emissions and air quality impacts.

c. IDEM assumed a silt content on the paved roads of 0.4 grams per square meter (0.4 g/m2). TSD Appx A at 3. Silt content is directly related to the particulate emissions from this source. The assumed 0.4 g/m2 is not a site-specific measurement, but is instead an assumption without sufficient basis. There is no permit requirement to maintain a silt loading of 0.4 g/m2 or less. U.S. EPA's emission factor for paved roads recommends collecting site-specific silt content, AP-42 § 13.2.1-6, and warns that silt loading in northern climates is highly variable, because of the additional emissions from snow and ice control. § 13.2.1.2. For industrial roads, like those at the EGS plant, the average silt content values provided by U.S. EPA's emission factor range from 7.4 to 292 g/m2. These values from U.S. EPA are more than 10 times higher than the unsupported 0.4 g/m2 value assumed by IDEM. Moreover, because salt and/or sand will presumably be added to the paved roads at EGS during winter months, it would be appropriate to adjust the default silt content values for industrial roads by 2 g/m2 for each application for antiskid abrasive for winter snow/ice control. AP-42 Table 13.2.1-3. IDEM's assumptions vastly underestimate the maximum worst-case emissions during any 24-hour period and, therefore, the air impacts.

d. IDEM assumed 50% control efficiency on paved roads during each hour of every day "due to incorporation of a dust minimization plan on roadway surfaces." TSD Appx. A at 3. The 50% control efficiency is not practically enforceable in the permit and has no basis. U.S. EPA's emission factor, which IDEM claims to rely upon, suggests measuring the site-specific control efficiency—based on measurements of silt before and after the control measures to be implemented-- to determine how much (if any) silt loading reduction occurs. AP-42 § 13.2.1.4. IDEM did not do so here and has no basis for its assumptions that silt loading will not exceed 0.4 g/m2 and that the facility will constantly achieve 50% control of particulate matter from roadways. In fact, based on the U.S. EPA-determined typical silt content values for industrial roads (measured on dust-controlled roads), the 0.4 g/m2 silt loading assumed by IDEM represents between 99.5 and 99.9% control. See AP-42 Table 13.2.1-4 (typical silt loading between 7.4 and 292 g/m2). There is no basis for assuming such a control efficiency. If a worst-case silt loading value is used, as required for air impact modeling (or even a more reasonable silt loading value), emission rates and air quality impacts are much greater than assumed by IDEM.

e. IDEM modeled emission rates from coal loading to the coal pile and from slag loading to storage piles that assume constant 4.5% moisture content of the coal or slag. TSD Appx. A at 4, 6. This value is not site-specific, but represents the "average" moisture content for coal arriving at a power plant. AP-42 Table 13.2.4-1. Particulate emissions are proportional to moisture content of the coal or slag. According to U.S. EPA's emission factor, which IDEM purports to rely upon, worst-case moisture content, rather than "average" moisture content, should be assumed to calculate worst-case emissions. AP-42 p. 13.2.4-5. The worst-case moisture content from the range provided by U.S. EPA is 2.7% (worst-case moisture content may be lower at EGS), compared to the 4.5% average value assumed by IDEM. Table 13.2.4-1. Using a worst-case value of 2.7%, or lower, results in higher emission rates and greater air quality impacts than modeled by IDEM. Moreover, there is no basis to apply U.S. EPA's "average" coal moisture content to slag loading.

f. IDEM assumed silt loading on the coal storage piles of 4.8 g/m2, before applying a control efficiency, to calculate emissions from coal pile maintenance. TSD Appx. A at 5. It is not clear where IDEM derived this number, but it is neither enforceable nor

representative of worst-case conditions for EGS. As noted above, the silt loading for paved industrial roads, which should be expected to have lower silt content, are actually higher than the value assumed by IDEM for coal piles. A worst-case silt loading value (or even a reasonable silt loading value) would result in significantly higher emission rates and air quality impacts than assumed by IDEM.

g. IDEM assumed 95% control of particulate emissions from coal pile maintenance. TSD Appx. A at 5. There is no basis for this control efficiency. Nor is this control efficiency enforceable. By assuming this unrealistic, if not impossible control efficiency, IDEM did not analyze air quality impacts based on worst-case emissions. Moreover, 95% far exceeds the best-case scenario according to U.S. EPA's emission factors. Water suppressants (as proposed for EGS) only approach 90% control efficiency when the moisture content ratio of "controlled" aggregate piles reach 5 times the "uncontrolled" moisture content. AP-42 Figure 13.2.2-2. Here, IDEM assumed an uncontrolled (average) moisture content of 4.5%. Therefore, water application would need to reach 27.5% or more before control efficiency approached 95%. Moreover, this 27.5% moisture content would need to be sustained at all times, even

during the hottest, driest periods, if it is assumed to represent the worst-case used for modeling air impacts. The permit does not require, and DEI will not be able to reach and sustain, such high control efficiency. Using a more reasonable control efficiency results in higher emissions and higher air quality impacts.

h. IDEM assumes particulate emissions from the coal storage pile are controlled by 50% at all times. TSD Appx. A at 7. This is not reasonable as a worst-case scenario for modeling. Additionally, IDEM's wind erosion emission estimates depend on generic AP-42 values that are not site-specific, are not enforceable, and do not represent worst-case emission values. A worst-case scenario would increase emission rates and ambient air impacts.

i. IDEM assumes a maximum storage pile size for coal and slag piles. TSD Appx. A at 7. The size and shape of the piles determine the particulate emissions from wind erosion. See e.g., AP-42 § 13.2.5-3, Equations 2 and 3. There is no permit limit on the size or requirement regarding the shape of the piles. The maximum size and geometric shape of the piles are not enforceable. Therefore, the size and shape assumed by IDEM do not constitute worst-case conditions, as required for modeling air impacts.

j. IDEM's emission estimates assume vehicle travel only 2 hours per day. The emission estimates assume 900 feet of vehicle travel per hour, but only 126 miles per year. TSD Appx. A at 3, 5. This equates to slightly more than 2 hours of vehicle travel per day. However, coal pile maintenance activities are expected to occur for more than 2 hours per day during one or more days per year. Additionally, vehicle travel on paved surfaces is not expected to occur equally each day. Days on which more activities occur are worst-case scenarios and must be modeled. Unless there are enforceable permit limits on the number and distance of vehicle trips on coal storage areas and paved surfaces, the air impact analysis must be based on the worst case, maximum theoretical emissions during any 24-hour period, which will increase the emission rate and air impacts.

k. Additionally, the modeling appears to have assumed that coal handling processes occurred on a constant basis, rather than during limited hours when trains arrive, coal is transfer from one pile to another, or delivery trucks are loaded. Expected annual coal throughput was estimated based on the fuel needs of an annual generating capacity, rather than the maximum hourly throughput for the coal handling equipment. This incorrectly assumes that coal

and slag handling processes essentially occur on a constant basis. This is not what is actually expected to occur. Instead, coal will be off-loaded and stacked when trains arrive every few days. Actual operations are expected to involve fewer hours of operation of these processes, and therefore greater hourly throughput than assumed in the air quality modeling analysis. In any event, IDEM underestimated the worst-case hourly throughput and emissions and, therefore, underestimated the air quality impacts.

l. Some emission sources appear to be missing from IDEM's air impacts analysis. There are no surge hoppers or front-end loader drops included in the emission estimates. However, it is likely that DEI intends to load coal from the long-term pile to the active pile by using front-end loaders to dump loads of coal into a surge hopper, or similar device, which then feeds conveyors. A similar process is likely for the active pile into the silos/grinders and for loading the slag from the storage pile into trucks for hauling. However, none of these likely emission points appear to have been included in IDEM's emission calculations or modeling.

m. All of the above emission rates were estimated based on U.S. EPA AP-42 emission factors. However, AP-42 emission factors are insufficient to estimate worst-case emissions, which are required

for air quality impact analysis, because AP-42 factors are based on averages collected from a limited number of facilities. *See e.g., In re Cargill, Inc.*, Petition No. IV-2003-7, Amended Order at 7 n.3 (Oct. 9, 2004).

53. The air impact analysis by IDEM estimates that, based on the erroneous assumptions above which underestimate emissions, PM10 emissions are between 79 and 80% of the PSD Increment. By correcting some or all of the erroneous assumptions, above, to represent worst case conditions as required for air impact modeling, the project does not satisfy 326 IAC 2-2-5 or 326 IAC 2-2-6. Therefore, a PSD permit to modify cannot be issued.

Issue 4: The Permit Lacks BACT Limits for CO2 and N2O.

54. The Clean Air Act and Indiana State Implementation Plan prohibit the construction of a new major stationary source of air pollutants unless the source is subject to a BACT emission limit "for each pollutant subject to regulation under this chapter emitted from, or which results from" the facility. 42 U.S.C. § 7475(a)(4); see also 326 IAC 2-2-4.

55. Carbon Dioxide (CO2) has been *regulated* under the Clean Air Act since 1993. And, on April 2, 2007, the Supreme Court held that carbon dioxide and other greenhouse gases are "pollutants" under the Clean Air Act—clarifying that they are, indeed, "*subject to* regulation." *Massachusetts v. EPA*, 127 S.Ct. 1438, 1460 (2007).

56. Section 821(a) of the Act provides: "Monitoring. – The Administrator of the Environmental Protection Agency shall promulgate regulations within 18 months after the enactment of the Clean Air Act Amendments of 1990 to require that all affected sources subject to the Title V of the Clean Air Act shall also monitor carbon dioxide emissions according to the same timetable as in Sections 511(b) and (c). The regulations shall require that such data shall be reported to the Administrator. The provisions of Section 511(e) of Title V of the Clean Air Act shall apply for purposes of this section in the same manner and to the same extent as such provision applies to the monitoring and data referred to in Section 511." 42 U.S.C. 7651k note; Pub.L. 101-549; 104 Stat. 2699 (emphasis added).

57. EPA regulations further require CO_2 emissions monitoring, 40 CFR §§75.1(b), 75.10(a)(3)); preparing and maintaining monitoring plans, 40 CFR §75.33; maintaining records, 40 CFR §75.57; and reporting such information to EPA, 40 CFR §§75.60 – 64. Additionally, 40 CFR §75.5 prohibits operation in violation of these requirements and provides that a violation of any Part 75 requirement is a violation of the Act. These requirements, including the requirement to monitor CO2, are also included in various state implementation plans. *See e.g.,* Wis. Admin. Code §§ NR 438.03(1)(a) (requiring reporting of pollutants listed in Table I, including CO2), adopted under the Act at 40 C.F.R. § 52.2570(c)(70)(i); NR 439.095(1)(f) (Phase I and phase II acid rain units… shall be

monitored for… carbon dioxide…"), adopted under the Act at 40 C.F.R. § 52.2570(c)(73)(i)(I). These provisions are all regulations under the Clean Air Act.

58. Nitrous Oxide ("N2O") is also regulated under the Clean Air Act. N2O is regulated in at least one State Implementation Plan approved by EPA, and therefore, is not only subject to, but is regulated under the Act. See Wis. Stat. §§ 285.60 (requiring air permits for all sources not otherwise exempted), 285.62(1); Wis. Admin. Code §§ NR 407.05, Table 3 (requiring permit application to include Nitrous Oxides if greater than 2,000 lbs/year). Moreover, nitrous oxide is also regulated under Wis. Admin. Code § NR 438.03(1)(a) and Table 1, adopted under the Act at 40 C.F.R. § 52.2570(c)(70)(i).

59. Therefore, N2O is regulated under the Clean Air Act.

60. Because CO2 and N2O are regulated under the Clean Air Act, through mandatory monitoring and reporting requirements, and permitting requirements for N2O, a BACT limit is required. The IDEM's failure to include BACT limits for CO2 and N2O is a legal error that must be reversed.

61. BACT at EGS includes capture and storage of CO2 emissions. According to Duke Energy's Chief Executive, the EGS site has the correct geology-- "the limestone-type geology -- which allows you to pump the CO2 into underground chambers" to allow sequestration of CO2 emissions.

B. <u>Legal Issues: Permit Terms And Conditions That Would Be Appropriate To Comply With the Law. 315 IAC 1-3-2(b)(4)(A)(ii).</u>

61. Compliance with all requirements of the PSD program are prerequisites for permit issuance, including BACT emission limits and demonstrated compliance with limits on air quality impacts. Therefore, because the Permit does not comply with these prerequisites, it must be vacated and permissions to construct revoked as invalid.

62. To the extent that Petitioners are required to state specific permit changes that would satisfy legal requirements, rather than revoking the permit in its entirety, the following changes are necessary to the Permit:

a. Deleting sections A.2(B), D.7, D.8, D.9, D.10, D.11, G.1, G.2, G.3, G.4, G.5, G.6.

b. Revoking authorization to construct and operate the emission sources listed in paragraphs (a) through (d) of the letter from Matthew Stuckey, IDEM, to Mr. Mack Sims, DEI, Re: 083-23529-00003 Significant Source Modification to Part 70 Operating Permit No.: T 083-7243-00003 (January 25, 2008).

C. <u>Identification of Persons Represented. 315 IAC 1-3-2(c)(1)</u>

63. Petitioners, identified above, are represented by the undersigned counsel.

64. Petitioners represent the interests of their members, including those identified specifically above.

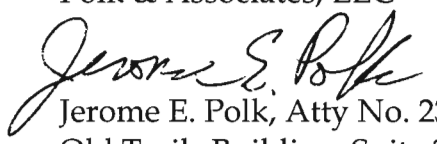
C) Statement of Against Whom Review Is Sought. 35 IAC 1-3-2(c)(2).

65. Review is sought of the permit decision of the Indiana Department of Environmental Management. IDEM is an agency of the State of Indiana and is charged with protecting and improving the air resources of the State through the Office of Air Quality. IDEM administers the issuance of permits regulating air quality in the State of Indiana and makes decisions regarding the issuance of air pollution permits, including the Permit at issue in this appeal.

66. The permittee is Duke Energy Indiana.

Respectfully submitted this 12th day of February, 2008.

Polk & Associates, LLC



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Garvey McNeil & McGillivray, S.C.

David C. Bender
Wis. Bar No.: 1046102
Christa Westerberg
Wis. Bar No.: 1040530
634 W. Main Street, Ste 101
Madison, WI 53703
Tel. 608.256.1003
Fax. 608.256.0933

I swear or affirm under penalty of perjury that the foregoing Verified Petition for Administrative Review and Stay of Effectiveness is true and correct to the best of my knowledge or belief.

DATED this 12th day of February, 2008.

Erin Chalmers
Staff Attorney, Sierra Club

I swear or affirm under penalty of perjury that the foregoing Verified Petition for Administrative Review and Stay of Effectiveness is true and correct to the best of my knowledge or belief.

DATED this 12th day of February, 2008.

Richard Hill /S.S.P.

Richard Hill
President, Save the Valley, Inc.

I swear or affirm under penalty of perjury that the foregoing Verified Petition for Administrative Review and Stay of Effectiveness is true and correct to the best of my knowledge or belief.

DATED this 12th day of February, 2008.

Grant Smith
Executive ~~Director~~, Citizen Action Coalition of Indiana, Inc.

I swear or affirm under penalty of perjury that the foregoing Verified Petition for Administrative Review and Stay of Effectiveness is true and correct to the best of my knowledge or belief.

DATED this _12th__ day of February, 2008.

_____

John Blair
President, Valley Watch, Inc.

CERTIFICATE OF SERVICE

I certify that I have served a copy of the foregoing pleading upon all parties and counsel of record in the above matter by depositing the same in the United States mail, postage paid, this 12th day of February, 2008.

The Indiana Office of Environmental Adjudication
Attn: Executive Secretary
100 North Senate Avenue
Indiana Government Center North
Suite N 501E
Indianapolis, IN 46204

Thomas W. Easterly, Commissioner
Indiana Department of Environmental Management
Indiana Government Center North
100 N. Senate Avenue
Indianapolis, IN 46204

Mack Sims
Duke Energy Indiana
1000 East Main Street
Plainfield, IN 46168

Duke Energy Indiana
c/o CT Corporation System
251 E. Ohio Street Suite 1100
Indianapolis , IN 46204

David C. Bender

CERTIFICATE OF GOOD STANDING

I swear or affirm under penalty of perjury that I am an attorney in good standing with the Supreme Court of Wisconsin and am currently licensed to practice law before all state court in Wisconsin. My Wisconsin Bar Number is 1046102.

DATED this 12th day of February, 2008.

David C. Bender

CERTIFICATE OF GOOD STANDING

I swear or affirm under penalty of perjury that I am an attorney in good standing with the Supreme Court of Wisconsin and am currently licensed to practice law before all state court in Wisconsin. My Wisconsin Bar Number is 1040530.

DATED this 11th day of February, 2008.

Christa Westerberg

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
MC 61-53
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

TO: Interested Parties / Applicant

DATE: January 25, 2008

RE: Duke Energy Indiana, Inc - Edwardsport Generating Station / 083-23529-00003

FROM: Matthew Stuckey, Deputy Branch Chief
Permits Branch
Office of Air Quality

Notice of Decision: Approval - Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

(1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
(2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
(3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

(1) the name and address of the person making the request;
(2) the interest of the person making the request;
(3) identification of any persons represented by the person making the request;
(4) the reasons, with particularity, for the request;
(5) the issues, with particularity, proposed for considerations at any hearing; and
(6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FNPER.dot12/03/07

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
MC 61-53, Room 1003
Indianapolis, Indiana 46204-2251
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(800) 451-6027
www.IN.gov/idem

Mr. Mack Sims
Duke Energy Indiana
1000 East Main Street
Plainfield, IN 46168

January 25, 2008

Re: 083-23529-00003
Significant Source Modification to:
Part 70 Operating Permit No.: T 083-7243-00003

Dear Mr. Sims:

Duke Energy Indiana was issued Part 70 Operating Permit T083-7243-00003 on August 10, 2004, for an electric generating plant. An application to modify the source was received on August 10, 2006, and additional information was received on July 9, 2007. Pursuant to 326 IAC 2-7-10.5 the following emission units are approved for construction at the source:

(a) One gasification block with acid gas removal/sulfur recovery, particulate removal and mercury removal consisting of the following:

(1) Two (2) refractory-lined, oxygen-blown, entrained flow gasifiers designated as GASIF1 and GASIF2, permitted in 2008, exhausting through Vents S-5a1 and S-5a2 during startup only.

(2) Two (2) natural gas fired gasification preheaters designated as GPREHEAT1 and GPREHEAT2, permitted in 2008, with a maximum heat input capacity of 19.1 MMBtu/hr each (high heating value basis), exhausting to Vents S-5a1 and S-5a2 during startup only.

(3) One (1) natural gas fired thermal oxidizer designated as THRMOX, permitted in 2008, with a maximum heat input for the pilot of 3.85 MMBtu/hr, exhausting to Stack S-4. The thermal oxidizer will combust waste gas streams from the Sulfur Recovery Unit (SRU) sulfur pit vents and intermittent gas streams for the SRU during startup, shutdown and trip events.

(4) One natural gas fired elevated open flare designated as FLR, permitted in 2008, with a maximum heat input for the pilot of 1.23 MMBtu/hr, exhausting to Stack S-3. An additional heat input of 1.44 MMBtu/hr (natural gas) will be provided to the flare as sweep enrichment gas/flare purge gas. The flare will combust syngas streams from various operations associated with the gasification process during startup, shutdown and trip events.

(b) One power block consisting of the following:

(1) Two (2) combined cycle combustion turbine trains each consisting of a combustion turbine and a heat recovery steam generator, designated as CTHRSG1 and CTHRSG2, permitted in 2008, using diffusion combustors firing either syngas, natural gas, or combined syngas and natural gas, and exhausting to Stacks S-2a and S-2b. The turbine trains use nitrogen diluent injection (to control NO_X) when firing syngas, steam injection when firing natural gas, and nitrogen diluent injection and steam injection when co-firing syngas and natural gas.

Nominal Heat Input Capacity (HHV)	
Fuel	**MMBtu/hr**
Syngas Only	2106
Natural Gas Only	2109
Combined Syngas and Natural Gas	2129

Stacks S-2a and S-2b have continuous emissions monitors (CEMs) for carbon monoxide (CO), nitrogen oxides (NO_X) and sulfur dioxide (SO_2). Mercury (Hg) will be monitored per requirements of 40 CFR Part 60, Subpart Da.

(2) One (1) reheat, condensing steam turbine, permitted in 2008.

(3) One (1) twenty-two (22) cell induced draft cooling tower designated as CT1 – CT22, permitted in 2008, exhausting to Stack S-9. The cooling tower will use a high-efficiency drift eliminator to control particulate emissions.

(4) One (1) natural gas fired auxiliary boiler designated as AUXBLR, permitted in 2008, with a maximum heat input capacity of 300 MMBtu/hr (high heating value basis) and exhausting to Stack S-6.

(5) Two (2) natural gas fired turbine gas conditioning preheaters designated as TPREHEAT1 and TPREHEAT2, permitted in 2008, with a maximum heat input capacity of 5 MMBtu/hr (per unit on a high heating value basis) and exhausting to Stacks S-5b1 and S-5b2 respectively.

(6) One (1) diesel-fired emergency generator designated as EMDSL, permitted in 2008, with a maximum rating of 2200 brake-horsepower (Bhp), exhausting to Stack S-7.

(7) One (1) diesel-fired emergency fire pump designated as FIRPMP, permitted in 2008, with a maximum rating of 420 brake-horsepower (Bhp), exhausting to Stack S-8.

(c) Material handling operations consisting of:

(1) Coal receiving and handling system, permitted in 2008, using enclosed conveyors consisting of the following equipment:

(A) 250 ton per hour coal pile drop point particulate emissions controlled by a baghouse, exhausting to Stack S-1D.

(B) One (1) 1200 ton per hour truck or railcar receiving and unloading station with enclosed drop points and particulate emissions controlled by a baghouse and exhausting to Stack S-1B.

(C) Two (2) enclosed 250 ton per hour coal grinding mills with particulate emissions controlled by a baghouse and exhausting to Stack S-1A.

(2) Lime handling system, permitted in 2008

(A) Transfer of lime from truck or railcar by a closed pneumatic conveyor to lime storage silo.

(B) One (1) 300 ton per hour lime storage silo with particulate emissions controlled by a baghouse and exhausting to Stack S-1C.

(d) Fugitive dust emissions consisting of:

(1) Coal storage piles including one (1) inactive coal pile identified as CP_IN, permitted in 2008, and one (1) active coal pile identified as CP_AC, permitted in 2008.

(2) Slag storage pile and slag handling, permitted in 2008.

(3) Paved roads, permitted in 2008.

The following construction conditions are applicable to the proposed project:

General Construction Conditions

1. The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Quality (OAQ).

2. This approval to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13 17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

Effective Date of the Permit

3. Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

4. Pursuant to 326 IAC 2-1.1-9 and 326 IAC 2-7-10.5(i), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.

6. Pursuant to 326 IAC 2-7-10.5(l) the emission units constructed under this approval shall not be placed into operation prior to revision of the source's Part 70 Operating Permit to incorporate the required operation conditions.

This significant source modification authorizes construction of the new emission units. Operating conditions shall be incorporated into the Part 70 operating permit as a significant permit modification in accordance with 326 IAC 2-7-10.5(l)(2) and 326 IAC 2-7-12. Operation is not approved until the significant permit modification has been issued.

All other conditions of the permit shall remain unchanged and in effect. For your convenience, the entire Part 70 Operating Permit as modified will be provided at issuance.

This decision is subject to the Indiana Administrative Orders and Procedures Act – IC 4-21.5-3-5. If you have any questions on this matter, please contact Kimberly Cottrell, OAQ, 100 North Senate Avenue, MC 61-53, Room 1003, Indianapolis, Indiana, 46204-2251, or call at (800) 451-6027, and ask for Kimberly Cottrell or extension (3-0870), or dial (317) 233-0870.

Sincerely/Original Signed By:

Matthew Stuckey, Deputy Branch Chief
Permits Branch
Office of Air Quality

Attachments:
Updated Permit
Technical Support Document
PTE Calculations

klc

cc: File – Knox County
Knox County Health Department
U.S. EPA, Region V
Southwest Regional Office
Air Compliance Inspector – Dan Hancock
Compliance Data Section
Permit Reviewer – Iryn Calilung
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Station Manager, Edwardsport Generating Station
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INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

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Commissioner

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PART 70 OPERATING PERMIT
OFFICE OF AIR QUALITY

Duke Energy Indiana - Edwardsport Generating Station
15424 East State Road 358
Edwardsport, Indiana 47258

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. Noncompliance with any provision of this permit, except any provision specifically designated as not federally enforceable, constitutes a violation of the Clean Air Act. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit No.: T083-7243-00003	
Issued by: Original Signed by Janet G. McCabe, Assistant Commissioner Office of Air Quality	Issuance Date: August 10, 2004 Expiration Date: August 10, 2009

First Significant Permit Modification T083-17006-00003, issued June 7, 2006

Significant Source Modification No.: T083-23529-00003	Pages Affected: Entire Permit
Issued by/Original Signed By: Matthew Stuckey, Deputy Branch Chief Permits Branch Office of Air Quality	Issuance Date:January 25, 2008